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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,212	12/22/2003	Kenneth R. Schimnowski	06005/36156A	7622

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EXAMINER	
WALLING, MEAGAN S	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,212	SCHIMNOWSKI ET AL.	
	Examiner	Art Unit	
	Meagan S. Walling	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 12-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22 and 23* is/are allowed.

6)☒ Claim(s) *1-9 and 12-14* is/are rejected.

7)☒ Claim(s) *15-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *22 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu (JP 2000-121408) in view of O'Shea (US 6,766,688).

Regarding claim 1, Muramatsu teaches measuring a flow rate of a fuel flowing through the supply line (see abstract); calculating an expended fuel volume based on the measured flow rate (see abstract); determining a remaining liquid fuel level in the tank based on the expended fuel volume and tank capacity (see abstract).

Regarding claim 2, Muramatsu teaches that a regulator is disposed in the supply line (Ref. 21).

Regarding claim 3, Muramatsu teaches a flow measurement module having a processor (Ref. 9) and a memory is provided for measuring the flow rate of fuel flowing through the supply line (par. 27).

Regarding claim 4, Muramatsu teaches that the flow measurement module is provided integrally with the regulator (see paragraph 9).

Regarding claim 5, Muramatsu teaches that the flow measurement module calculates the expended fuel volume based on the flow rate of gaseous fuel (see abstract).

Regarding claim 6, Muramatsu teaches that the flow measurement module determines the remaining liquid fuel level in the tank based on the expended fuel volume and the tank capacity (see abstract).

Regarding claim 7, Muramatsu teaches that the flow measurement module includes a communication link, and in which a report station controller is communicatively coupled to the flow measurement module by the communication link (par. 22).

Regarding claim 8, Muramatsu teaches that the flow measurement module communicates the remaining liquid fuel level in the tank to the report station controller (par. 22).

Muramatsu does not teach that the fuel flowing through the supply line is gaseous or prompting a delivery of liquid fuel to the tank in response to the remaining liquid fuel level.

O'Shea teaches a tank liquid level or volume gauge (see at least abstract) for a tank containing fuel stored as liquid, but released from the tank for use in gaseous form (column 1, line 65 – column 2, line 1). The tank includes a gauge for displaying the amount of fuel remaining in the tank and a light that displays when the tank is almost empty, thus prompting a delivery of fuel to the tank (column 2, lines 52-55).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Muramatsu that determine the remaining fuel in a tank with the teachings of O'Shea that determine the amount of propane remaining in the tank and also display the amount of fuel remaining in the tank. The motivation for making this combination would be accurately determine the amount of propane left in a tank for a barbecue, for example, and to display this amount so as not to run out of fuel without an extra supply available (O'Shea, column 1, lines 16-19).

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu in view of O'Shea and further in view of Martel (US 5,642,097).

Together Muramatsu and O'Shea teach all of the limitations of claim 9 except the limitation of generating a low fuel alarm when the remaining liquid fuel level in the tank corresponds to a low fuel level.

Regarding claim 9, Martel teaches generating a low fuel alarm when the remaining liquid fuel level in the tank corresponds to a low fuel level, wherein the delivery of liquid fuel to the tank is prompted in response to the low fuel alarm (column 5, lines 33-38).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Muramatsu and O'Shea with the teachings of Martel to use an alarm when the fuel level is low to prompt delivery of fuel to the tank. The motivation for making this combination would be to alert the user to refill the tank to avert a possible system shutdown (Martel, column 5, lines 35-38).

3. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu (JP 2000-121408) in view of Martel (US 5,642,097).

Regarding claim 12, Muramatsu teaches a tank having a known liquid capacity (Ref. 2); a supply line in fluid communication with the tank (Ref. 24); a regulator disposed in the supply line (Ref. 21); a flow sensor associated with the supply line adapted to generate fuel flow information, the flow sensor including a communication link for communicating the fuel flow information (see abstract and par. 22); and a report station communicatively coupled to the flow

sensor by the communication link to receive the fuel flow information, the report station including a controller having a memory (par. 22).

Regarding claim 13, Muramatsu teaches that the flow sensor comprises a flow measurement module integrally provided with the regulator, wherein the flow measurement module includes a processor and a memory (see paragraphs 9 and 27).

Regarding claim 14, Muramatsu teaches that the flow measurement module processor is programmed to calculate an expended fuel volume based on the fuel flow rate (see abstract).

Regarding claims 12, Muramatsu does not teach prompting a delivery of liquid fuel to the tank in response to the remaining liquid fuel level.

Regarding claim 12, Martel teaches refilling a gas tank when the fuel level becomes low (column 3, lines 38-42).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Muramatsu with the teachings of Martel to schedule a delivery of a fuel in response to the fuel flow information. The motivation for making this combination would be to alert the user to refill the tank to avert a possible system shutdown (Martel, column 5, lines 35-38).

Allowable Subject Matter

4. Claims 15-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Please see previous office action for reasons for allowance.

5. Claims 22 and 23 are allowed.

The following is an examiner's statement of reasons for allowance: Claims 22 and 23 contain subject matter that was indicated allowable in the previous office action. Please see the previous office action for reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S. Walling whose telephone number is (571) 272-2283. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msw

John Barlow
Supervisory Patent Examiner
Technology Center 2800